

WHAT IS CLAIMED IS:

1. A method of predicting component crack behavior in a nuclear reactor, the method comprising:

(a) receiving input water chemistry characteristics over a global computer network;

(b) accessing a crack growth behavior model that predicts component crack behavior according to the input water chemistry characteristics; and

(c) outputting over the global computer network a crack growth prediction profile according to an analysis of the crack growth behavior model.

2. A method according to claim 1, wherein step (c) is practiced by generating a graphical representation of a crack growth rate according to the input water chemistry characteristics.

3. A method according to claim 1, wherein step (c) is practiced by outputting a real time crack growth prediction according to the input water chemistry characteristics.

4. A computer system for predicting component crack behavior in a nuclear reactor, the computer system comprising:

at least one user computer running a computer program that receives input water chemistry characteristics; and

a system server running a server program, the at least one user computer and the system server being interconnected by a computer network, the system server storing a crack growth behavior model that predicts component crack behavior according to the input water chemistry characteristics, and the system server outputting over the computer network a crack growth prediction profile according to an analysis of the crack growth behavior model.

5. A computer program embodied on a computer readable medium for predicting component crack behavior in a boiling water nuclear reactor, the computer program comprising:

means for receiving input water chemistry characteristics over a global computer network;

means for accessing a crack growth behavior model that predicts component crack behavior according to the input water chemistry characteristics; and

means for outputting over the global computer network a crack growth prediction profile or crack growth based result according to an analysis of the crack growth behavior model.